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ABSTRACT

This book, written from the policymaker's perspective, examines key issues facing education ministries trying to find the optimal size of and curricular emphasis for their secondary-education systems. It sets out the principle choices to be made and the dilemmas encountered regarding the scale and thrust of the sector. The work first looks at key definitions and gives a brief historical overview of the secondary-education system. It sets out basic parameters of understanding secondary education and its role in the overall education system and analyzes the different types of secondary schools. It then goes on to examine the development of secondary education in the developed world and in developing countries. It then introduces the concept of positioning, that is, finding the correct balance between access and curriculum emphasis that allows the secondary-education system to satisfy a particular set of criteria. It also examines the case for diversified education and points out that overall context within which education systems function is changing. Finally it sets out the different policy options and pinpoints important strategic decisions to be taken into account when designing a curriculum. They are grouped into three overlapping areas: organization, content, and control. (Author/WFA)

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POLICIES & STRATEGIES FOR SECONDARY EDUCATION

POSITIONING SECONDARY-SCHOOL EDUCATION IN DEVELOPING COUNTRIES

Expansion and curriculum

Donald B. Holsinger
in collaboration with
Richard N. Cowell

EA 032717

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International Institute for Educational Planning

Positioning secondary school education in developing countries: expansion and curriculum

by

Donald B. Holsinger

in collaboration with

Richard N. Cowell

December 2000

UNESCO: International Institute for Educational Planning

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Table of contents

Summary 7

Chapter I. Introduction and overview 11

Chapter II. A brief history of secondary education 13
  1. Secondary education in Europe and the USA 13
  2. A broader and more universal curriculum 15
  3. Secondary education in developing countries 17

Chapter III. Defining secondary education today 21
  1. General/academic 22
  2. Vocational/technical (VET) 22
  3. Diversified/comprehensive 23

Chapter IV. When and how should secondary education be expanded? 27

Chapter V. Differentiating national curricula as a response to increased coverage 41
  1. Organization and subject content 42
  2. Vocationalization of the secondary curriculum 45
  3. The Colombian data 49
  4. The Tanzanian data 51
  5. Diversification as a response to social demand 53

Chapter VI. Changing content of secondary systems 61

Chapter VII. Key ideas and important trade-offs in the secondary curriculum 65

1. Trade-offs dealing with organization 66
2. Trade-offs dealing with content 71
3. Trade-offs dealing with control 74

Chapter VIII. Summary and priority issues 77

Chapter IX. Conclusions 85

Bibliography 86

Summary

This document, written from the policy-maker's perspective, examines key issues facing education ministries trying to find the optimal size of, and curricular emphasis for, their secondary-education systems. It sets out the principal choices to be made, and the dilemmas encountered, regarding the scale and thrust of the sector.

The work first looks at key definitions of the secondary-education system and gives a brief historical overview of the sector. It then introduces concepts useful for assessing its optimal structuring and makes a case for re-evaluating diversified education. Finally it sets out the different policy options.

Holsinger and Cowell begin by setting out the basic parameters for understanding secondary education and its role in the overall education system, and analyze the different types of secondary school that exist: academic, vocational, and diversified/comprehensive. Broadly speaking, academic education is oriented to giving students grounding in the scholastic disciplines and preparing them for possible future studies. Vocational education is aimed at transferring competences and skills for specific occupations. Diversified education caters to both types of student, allowing some crossover. The authors place these types of education on a continuum, with academic and vocational education at opposite ends and diversified education in the middle.

The authors then go on to look at the development of secondary education, first in the developed world and then in developing countries.

In Chapter IV, Holsinger and Cowell introduce the concept of 'positioning', i.e. finding the correct balance between access and curricular emphasis (degree of vocationalization) that allows the secondary-education system to satisfy a particular set of criteria. Positioning becomes more of an issue as greater numbers of students are incorporated into the secondary-education system for, as coverage increases, the need to diversify curricular offerings also grows. Of course, resource considerations, a given country's history, the relative autonomy of schools and other factors will also play a role.

The authors set out five main points to be considered when assessing how to 'position' a country's secondary-education sector.

- How to prepare students for the workplace and, accordingly, to what extent vocational skills should be included within secondary education.
- To what extent contact with the workplace should be included to prevent isolation of adolescents from society and the labour market.
- How to open up access to secondary education yet preserve quality.
- What the implications of uniform provision of education or a mixed market of providers will be in terms of coverage and equity.
- The extent to which all or part of secondary education should become part of universalized and homogeneous basic education.

The authors examine the case for diversified education, and point out that the overall context within which education systems function is changing. The workplace demands more competences from students, and greater levels of flexibility to carry out multiple tasks. The importance of languages and technology is increasing, even for students in 'vocational professions'. This raises the question of the adequacy of the traditional division between academic and vocational education.

Much work has been done on the undesirability of vocational education in secondary schools, using cost-benefit analysis. Holsinger and Cowell state that the prevailing perception of diversified education, like that of vocational education, is that it is too costly. The authors make a case for a re-appraisal and examine one of the seminal works that contributed to the conventional wisdom on this type of education, namely Psacharapoulos and Loxley (1985). They conclude that adding vocational subjects into purely academic schools may actually not have a big cost impact, but will probably boost learning.

Indeed, academic secondary schooling may not be appropriate for all students and may also have unwanted effects in countries with a large subsidized university sector. Conversely, terminal non-academic secondary education can be very expensive, and ineffective in leading to jobs. Diversified education may then be a relatively inexpensive and flexible option to consider.

The authors then look at what form lower-secondary education should take. In many countries, access is becoming universalized, and teaching content homogenized. This is a positive development in many ways, as lower secondary is vital for preserving the gains made in primary school, and there is growing evidence that the bulk of the externalities gained from secondary education (lower fertility and maternal mortality rates) are accrued at the lower level.

At upper-secondary level, however, the curricular offerings may need to be diversified. Users have different destinations and, due to cost considerations, universalization of access to this level may not be possible.

In conclusion, the authors pinpoint important strategic decisions to be taken into account when designing a curriculum. The authors group them into three overlapping areas – organization, content, and control.

Organizational issues encompass the following: should education be the same for all, or should choice of courses or streams be allowed; how many subjects should be taught and to what depth; to what extent should courses be integrated or taught as separate units; how can new information be incorporated; and to what extent should non-formal options be provided?

Content-related issues are: how to widen access yet maintain quality; how to provide an adequate mix of academic and vocational content; and how to update and modernize curricula whilst preserving national identity.

Issues relating to the control of secondary education encompass: defining curriculum content; financing; and reconciling the role of the public and private sector in education provision.

Chapter I
Introduction and overview

Secondary education has increasingly become a central policy concern of developing countries, particularly among those that have made rapid progress in universalizing primary education, and those in which demographic transition has shifted towards adolescents. The majority of countries in Latin America and the Caribbean, East Asia, the Middle East and some in Africa are grappling with the question of how to either provide skills and knowledge enabling adolescents to move to tertiary education, or ensure a smooth transition to work for students whose secondary schooling will be terminal.

Secondary education also addresses problems unique in human development. Without requisite education to guide their development not only would young people be ill prepared for tertiary education, or for the workplace, but they would also be susceptible to juvenile delinquency and teenage pregnancy, thereby exacting a high social cost. Hence, the challenge to secondary education is enormous. It is an unfinished agenda that all countries will face up to as they develop.

The purpose of this paper is to reflect on the experience of countries which are struggling with their own solutions regarding the optimal size and curriculum at the secondary level and to make these solutions known more broadly throughout the world. It is also to look at the experience of the NGO and donor community and to draw lessons from that experience to guide the growing international support for this important sub-sector.

This paper begins with a brief overview of secondary education, outlining the definitional issues and key dimensions critical to understanding the sub-sector and a few paragraphs concerning the pertinent historical context of secondary education. The rationale for examining the lower secondary grades separately from the upper level has been set out separately and it is argued that as larger proportions of youth are enrolled, the curriculum will invariably diversify in order to encompass a commensurate range of personal abilities and societal needs. An old but influential World Bank study of two national experiments with diversified secondary schools is examined and new interpretations of that study's findings are offered. The construct of 'positioning' in connection with five key decisions to be made concerning secondary expansion and curricular emphasis is introduced. Frequently encountered trade-offs in fundamental curriculum development are then presented, together with the final conclusions.

Chapter II

A brief history of secondary education

The history of secondary education in Europe and the United States of America is instructive, since, in many respects, its evolution has guided patterns of curricular development in other parts of the world. Yet, the process of curricular design and development has varied widely according to the extensive cultural and geographic diversity that exists worldwide. The purpose of this section is to set the stage for the conceptual discussion of diversified secondary curricula throughout this paper by providing a concise overview of the evolution of the secondary education curriculum in Europe, the USA, and developing countries, as well as the trends that are now emerging from the 1990s.

1. Secondary education in Europe and the USA[1]

In Europe, higher education, including secondary education, began with training in religion and philosophy. Its purpose was to prepare leaders, especially religious leaders, and its curriculum reflected this purpose. As time passed, general topics for more applied professions were added as part of secondary and higher education curricula, and the curriculum was broadened accordingly.

As these general topics were gradually added to the curriculum, they remained philosophical or theoretical in orientation. They were not studied as systems of empirical data, and proofs and validation of knowledge were

[1] This section is based on Cowell, R.N. 1993a. *Secondary education curriculum design and development*, Education and Social Policy Department, April. Washington, D.C.: The World Bank.

theoretical rather than experimental. The medieval Trivium (grammar, rhetoric, and logic) and Quadrivium (arithmetic, music, geometry, and astronomy) were treated in this way. While Trivium and Quadrivium are associated with higher education, there was little meaningful distinction between the secondary and tertiary curriculum. Many early university students were of what is now considered to be secondary-school age.

The earliest secondary schools were based on Renaissance models, the role of Latin and Greek being paramount. In 1599, the Jesuits implemented the first clear and complete specification of subjects and content as part of the Counter-Reformation. This curriculum was called the Ration Studiorum (plan of studies), and it was initially implemented at the University of Salamanca in Spain.

These early European secondary schools were almost exclusively for males, focusing on intellectual training in its narrow sense. Their purpose was to promote logical thinking, refined forms of expression, and improved memory – in short, mental discipline. They paid little attention to the practical application of knowledge in vocational settings. Education sought largely to create an elite group of men, trained and educated in the liberal arts, prepared to assume leadership roles in any sphere.

The Enlightenment of the eighteenth century and the industrial revolution of the late eighteenth and early nineteenth centuries put a new emphasis on science and technology and on empirical studies in general. Moreover, formal government involvement in secondary education grew, with concomitant involvement in the curriculum. Yet education for vocational purposes continued to be imparted primarily through apprenticeship systems. Secondary schools with less prestige and a less rigorous curriculum, such as a *Mittelschule* in Germany, the *College moderne* in France, and the technical school in England, appeared throughout the century. In the USA, private secondary-level academies for the elite existed throughout the colonial period. The first public high school in the USA was established in Boston in 1821.

From the nineteenth century to the Second World War, the curriculum at the secondary level began to encompass more subjects and became more specific, detailing the content to be covered and the time allotted for doing so. During this period, emphasis on philosophy, divinity, classical languages and ancient history began to wane, and was replaced with modern languages and literature, modern history, and scientific and technological subjects. Moreover, the objectives of secondary education and details of curricular content began to be specified more completely and carefully. At this time, most governments decided to educate a broader segment of their secondary-school-age population, and included females for the first time. Secondary education became less elitist and more universal and its curriculum more inclusive, or diverse. Although the curriculum was dominated by the needs of the socially and economically privileged rather than by the needs of the masses, there began, nevertheless, an irreversible process of change that acknowledged a growing heterogeneity of student backgrounds and post-secondary options.

2. A broader and more universal curriculum

In the two decades before the Second World War, the influence of John Dewey and the Progressive Movement, although targeted at the primary education level, had a major influence on secondary-level education. The progressives helped increase curricular emphasis on the practicality and social usefulness of schooling and on 'learning by doing'. Moreover, separate lower and junior secondary schools were established to cater to the growing number of students entering the secondary level.

The trend to broaden the curriculum began earliest and went farthest in the USA. In the twentieth century, it was responsible for introducing many new practical and vocational subjects. In the second half of the century, courses in drivers' education, family living, consumer economics, and mathematics for everyday life appeared for the first time. As students with a greater range of abilities, interests, and motivations entered the secondary level, 'streaming' and 'homogeneous grouping' became more prevalent. Academic secondary schools became more comprehensive and diversified. Courses and even course sequences in such vocational areas as graphic design, hair care and styling, automotive repair, carpentry and machine shop, and home economics began to appear.

The launching of the Sputnik satellite by the Soviet Union in 1957 acted as a powerful impetus to the increase in the number of scientific topics taught in the Western secondary curriculum, the rigour with which they were taught, and the care taken in their organization and presentation. The Western world, particularly the USA, did not want to fall behind the USSR in scientific and technological achievement. Sputnik helped accelerate the 'new curriculum' movement of the 1960s and 1970s, which reoriented curricular content around the structure of the academic disciplines as defined by academicians. The 'structure of the discipline' movement became associated with inquiry or discovery learning and with inductive as opposed to deductive teaching methodologies.

At the same time, experimentation with the organization of schools and with teaching methods became intertwined with curricular reform. This period saw the advent of the Leicestershire system and other 'open' education systems, the School without Walls, the Nuffield Foundation secondary science curriculum (which gave teachers great control over what was taught), programmed instruction, learning contracts in which students had partial control over their curriculum, competency-based systems, systems in which educational objectives were formulated according to behavioural frameworks, and other such innovations.

In general, the trend in the post-Second World War period has been to divide students into streams, to make a single comprehensive secondary school serve a wider variety of interests and abilities, to provide access to a wide range of higher education through alternative curricula and to broaden the secondary curriculum to include more subjects. The United Kingdom is a partial exception to this trend, as students tend to study only three subjects for their 'A' level examination. In the USA, schools have begun to offer a rich array of classes in a single building and to counsel students to take courses appropriate to their interests and abilities. Some critics see curricular development in the twentieth century as basically adding to and watering down traditional content as the quantity of knowledge increases and schools attempt to meet the needs of more students.[2]

3. Secondary education in developing countries

Although the great universities of the Islamic world antedated the European universities founded in the Middle Ages, curricular evolution in the developing world is chiefly the story of primary, not secondary or tertiary, education. Indigenous systems of socialization and education have always existed in all cultures, but in the developing world they did not involve formal academic secondary education to any significant extent until recently.

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[2] As one commentator said, "Educators themselves have been generally slow to innovate other than on the principles of substituting newish content for old and introducing limited reform in order partially to meet the changing needs of an expanding and diversifying school population". (See Skilbeck, M. 1990. *Curriculum reform: an overview of trends*. Organisation for Economic Co-operation and Development.) However, the United Kingdom, Australia, and New Zealand are exceptions to this statement.

Colonial powers in the eighteenth, nineteenth, and early twentieth centuries educated only a very small portion of colonized peoples, and they educated this portion only at a basic level. In general, their interest was to produce competent workers. Little education was necessary for this purpose; indeed, education could be seen as antithetical to it.

Colonial educational policy for those few individuals educated beyond the primary school tended to emphasize the production of middle-level clerical and administrative personnel. Hence, the curriculum stressed correct language, arithmetic and accounting abilities, and an adequate fund of general knowledge, as distinct from scientific, aesthetic, or vocational subjects. Great importance was placed on the authority of the teacher and of the spoken and written word.

The independence of colonial countries in the two decades after the Second World War brought a near universal recognition of the importance of education at all levels for a greatly increased proportion of local populations. After independence, ex-colonial countries kept old colonial curricula for a surprisingly long time – indeed, some have been maintained intact until the present day. While newly independent countries struggled with educational policies, curriculum issues were frequently translated into language-of-instruction issues as governments attempted to unify societies which were often large, heterogeneous, and multilingual – thus the emphasis on Bahasa Indonesia in Indonesia, the 'Three Language Formula' in India, and English in Nigeria. Socialist countries often emphasized political doctrine and practical skills for rural production, as in Tanzania and Cuba.

Industrialized countries have tended to adopt a more flexible approach to educational experimentation, including experimentation in curriculum. While curricular models in developing countries continued to come primarily from Europe and the USA and to be centralized at the national level, examples of local curricular development efforts occurred in, among other places, Omu in

Nigeria and Bakht ur-Ruda in Sudan before independence, and in Sri Lanka and Botswana in the 1970s and 1980s.

The new curricular movement of the 1960s had certain influences on the developing world. Many developing countries adopted the UNESCO biology project, the African Education Programme and adaptations of PSSC Physics by the Education Development Center (USA), and the Nuffield Science Programme, with mixed results. In the 1960s, 1970s, and 1980s, several curricular development cells were established at the national level (in India, Indonesia, Kenya, Malaysia, and the Philippines). Some developing countries have experimented with comprehensive-type secondary schools (Nigeria, Liberia, and Egypt).

Chapter III
Defining secondary education today

The secondary sub-sector presents some problems of definition in the sense that it falls between primary and tertiary levels and there is no universal agreement as to where primary ends and tertiary begins. The duration of (or the number of grades covered in) secondary education varies from three years in El Salvador to eight years in Yugoslavia, Kuwait, etc. Similarly, the grade at which secondary education begins varies considerably (e.g. Grade 5 to Grade 9). The usual duration is, however, Grades 7-12.

Most countries (Latin America is an exception) divide the secondary level of education into a first or lower segment and a second or higher segment. These may be denoted by different names, with a particularly varied set of names for the lower segment: middle, intermediate, lower secondary, junior high, upper elementary, etc. In different countries these labels may encompass different grades, student ages, curriculum, and objectives, and may be related to the educational levels above and below them in a variety of ways.[3] The higher or upper-secondary level is usually labelled simply in these terms, or may be called senior high school in areas influenced by American nomenclature. It is also sometimes referred to as the pre-university level.

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[3] There is a worldwide trend to establish the concept of 'Basic education', understood to mean a minimum schooling standard for everyone in a given society. This is frequently done by adding to the primary grades the first part of the secondary cycle, typically called the lower or junior secondary cycle. Thailand is undergoing this change currently. The combination of primary plus lower secondary then becomes 'Basic education', usually administered separately from secondary education.

An additional complexity of the secondary sub-sector is the wide range of types of educational institutions falling under this heading. Attempts to define types by organization, curricular emphasis, or outcome objectives almost always reveal substantial overlap among categories. Exceptions to any classification, including this one, are plentiful.

1. General/academic

The general secondary (hereafter GSE) curriculum is biased towards developing general academic skills in the language arts, sciences, mathematics, and humanities. The curriculum usually provides for considerable student choice, especially in the upper grades. At the same time, a common core of courses is typically required of all students for certification. As part of the GSE curriculum, many countries offer an advanced programme of elective courses (i.e. the international baccalaureate) to prepare students for the university entrance examination or to assure comparability of preparation across countries or states. Because of its academic rather than pre-vocational focus, the GSE curriculum contains little, if any, vocational coursework but retains the flexibility to enable graduates not proceeding to university education to undertake on-the-job training or advanced study in a technical institution.

2. Vocational/technical (VET)

This curriculum explicitly aims at the preparation for specific jobs or occupations. Typically, the curriculum provides for instruction carefully directed to either pre-vocational knowledge (electronics) or to specific, job-related skills (i.e. electronic appliance repair). The objective of the VET institution is to impart limited knowledge and precise and carefully specified skills, and minimal theory directly related to these skills, all of which are designed to enable students to undertake advanced training, particular employment or to pursue certain professions.

3. Diversified/comprehensive

These are multi-purpose institutions that combine under one roof the objectives of an academic course of study and one or more vocational fields. Frequently these schools were originally academic secondary schools to which vocational content was inserted in the curriculum with the objective of making the school more responsive to labour market needs and to serve a more diverse student clientele. Diversified schools typically allow some crossover so that academic students are permitted limited vocational coursework and vocational students are encouraged to continue some academic coursework. Comprehensive schools permit fewer crossovers. In these schools, aptitude and achievement tests and teacher recommendations are used to screen students for academic or vocational tracks.

It is clear that these three broad categories of secondary schools are arranged along a continuum of specialization in their dominant instructional objectives. At one end the schools are single-purpose institutions with an intensely academic curriculum. At the other end they are similarly specialized but with a vocational/technical curriculum. Secondary schools lying in the middle of the continuum are multi-purpose institutions combining elements of both ends of the spectrum into their instructional programme. *Figure 1* depicts this curriculum specialization continuum.[4]

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[4] Adapted from Psacharaopoulos, G. and Loxley, W. 1985. *Diversified secondary education and development: evidence from Colombia and Tanzania: 18.* Baltimore (MD): The Johns Hopkins University Press.

Figure 1. Secondary education curriculum specialization continuum

Academic instructional objective	Multi-purpose instructional objective	Vocational instructional objective
(Lycées, Gymnasia)	(Comprehensive schools)	(Vocational schools)
0% <	Class time spent on vocational subjects	< 100%

It is difficult to distinguish 'Diversified schools' from 'Comprehensive schools'; both combine some occupational courses in an otherwise general academic curriculum. *Figure 1* above attempts to bring some order to the curriculum question at the secondary level by presenting a continuum of academic and vocational content.

Stated outcomes and long-term social objectives of the different types of secondary schools often overlap. Almost all statements of the goals or objectives of all types of secondary education include items such as preparing students for the world of work and making students smoothly functioning members of society. These statements are included for political as well as educational reasons and they often downplay academic goals. Such objectives may or may not be stated in 'occupational' or 'vocational' terms, but they invariably have, directly or indirectly, occupational implications. Indeed, in some countries, even academic secondary training is justified in vocational terms – that is, as preparation for careers in teaching. Yet, in practice, access to institutions or streams offering a narrowly focused academic curriculum is often highly coveted, especially by middle-class parents.

Chapter IV

When and how should secondary education be expanded?

The classical Economics perspective on this question suggests that government should continue to invest in additional secondary education until the return on such investments falls below that on other education investments.[5] Despite debate concerning the appropriates of sub-sector rate-of-return (RoR) analysis, information of this type, when examined together with other data (to be described), and social and political priorities, can only improve the decision-making process. Too often discussion of RoR calculations has focused on the value of such calculations as if these rates were to be the sole basis for a complex decision rather than one among a range of indicators against which the objective soundness of social policy might be judged.[6]

[5] Numerous World Bank occasional and policy papers address this matter. For a general and non-technical discussion we suggest World Bank. 1995. *Priorities and strategies for education: a World Bank review*. Washington, D.C.: World Bank.

[6] Individual rate-of-return studies suffer from two major flaws. First, wages are used as proxy indicators of worker productivity. More recent work has used multiple measures of productivity (see, for example, Knight, J. and Sabot, R. 1990), including the effects of school attainment on agriculture productivity (for example, Lockheed, M.E.; Jamison, D.T. and Lau, L. 1980; and Moock, P. 1981. "Education and technical efficiency in small farm production", in *Economic Development and Cultural Change*, 30: 723-739). Yet most individual-level studies simply assume that wages represent measures of productivity. This assumption is difficult to substantiate in many countries where the wage-sector is dominated by trade and government workers. Second, individual-level studies cannot capture benefits not accruing to specific individuals (externalities), which may lead to underestimates of schooling's economic effects. Third, schooling effects may be overestimated when the sector simply sorts more productive people into higher-paying jobs, absent of any value-added effect from education attainment *per se*. Since the work of Edward Denison in the late 1950s, researchers have constructed aggregate-growth models to estimate the discrete influence of education (sector size and school

The answer to the question 'When should public authorities undertake an expansion of secondary education?' depends upon how they hope to 'position' the sub-sector in their respective societies. At its most fundamental level, 'positioning' may mean nothing more than affixing a rank to secondary expansion in an array of competing social services. To determine its priority ranking, officials will typically consider notions of optimal size, anticipated economic return to additional investments, social role and specific functions. In addition to RoR questions, decisions in five major areas need to be taken. These are discussed below. Consensus among major decision-makers and stakeholders with respect to these 'decision points' will guide education authorities to make sound policies and thus position secondary education optimally in a specific social, cultural, historical and economic context. As is now becoming clear, 'positioning' refers to locating the secondary education sub-sector in a multi-dimensional matrix where coverage (or access), and curricular emphasis are the two principal axes. Coverage means the proportion of age-eligible children enrolled. Curricular emphasis, in the secondary context, refers to the degree of vocationalization of the curriculum ranging from purely academic to pre-vocational training. For optimal positioning, planners and political leaders would hope to fit secondary schools rationally into this matrix. For example, to prepare youth to fill wage-sector jobs, to raise the proficiencies of aspiring university entrants, to reinforce nation building and to increase enrolments in a particular district or among a particular religious, ethnic or political segment of the population, 'X' amount of coverage is necessary and 'Y' share of the required curriculum must be devoted to vocational subjects. Adjustments may be made to either dimension independent of the other or to both simultaneously in order to reposition secondary education.

quality) on nation-level economic growth. For methodological reviews, see Jorgenson, D. 1987. "The contribution of education to economic growth 1948-1973". In : *Education and national productivity*. Cambridge (MA): Harvard University Press. Blaug, M. 1976. "The empirical status of human capital theory: a slightly jaundiced survey". *Journal of Economic Literature*, 14(3): 827-855; and Lau, L.; Jamison, D.T.; Louat, F. 1991. *Education and productivity in developing countries: an aggregate production function approach*. WDR Working Paper 612. Washington, D.C.: World Bank.

The school, however, often behaves as an insular institution with a life of its own, operating according to its own objectives, habits and even rituals independent of the positioning decisions or other decisions made in connection with it. The organizational form of secondary schooling passed on by colonial regimes – often displaying an amazing degree of robustness in post-independence eras – is not necessarily a deliberate act of positioning or even relevant to cultural commitments or local economic demands. In predominately agrarian societies with strong colonial influences, for example Uganda, a residential secondary school may emphasize academic instruction that is appropriate only for the small share of youth who will either attend a national university or find jobs in the urban wage sector.

The repositioning of secondary education is not an easy task even when resources are available to finance it. The functions of education and the clientele to be served are not easy to alter. Parents worldwide appear to have a strong preference for academic secondary education, rather than the vocational track. This has long been true and is the more remarkable given that many governments have attempted to diversify the secondary curricula, moving away from the academic and urban bias.[7] The balance of this chapter is devoted to the explication of five major decision points. These discussion (or critical decision) points facilitate official dialogue with respect to positioning by focusing attention on key policy areas. There are fewer certain answers here than questions, but the experience of many countries permits us to make inferences that, in turn, leads to some generalized advice.

Decision Point 1: Preparation for adult work activity

Historically in the West, secondary schools enrolled a tiny share of the adolescent population. This was largely true because the school was designed to serve the interests of the church or university, not the labour market. Only in this century did industrial growth in the United Kingdom and the United States of America – along with corresponding social unrest and a sharp decline in labour demand for young workers – push those governments to expand access to secondary education and, consequentially, to their secondary school curricula so as to include vocational subjects. Only in the USA were these pressures, along with implicit faith in the virtue of social opportunity, sufficient to lead to mass secondary schooling.

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[7] See Benavot, A. 1983. "The rise and decline of vocational education", *Sociology of Education*, 56(2): 63-76.

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The transformation of the North American high school into a mass institution, serving the majority of youth, urban and rural, is a recent phenomenon. Importantly, the expansion of secondary schools was not an essential ingredient of early industrial development. In the USA, secondary education enrolment rates did exceed 20 to 30 per cent prior to the industrial revolution, yet the rising demand of factory owners for young workers actually slowed school expansion. In Western Europe, commercial expansion in the eighteenth and early nineteenth centuries occurred while secondary enrolments were at about 10 per cent of the age cohort. Industrial revolutions in England and Prussia came and went without secondary enrolment rates ever exceeding 30 per cent. Typically, in both the USA and Europe, gains in real family income and the increased scarcity of entry-level jobs for youth (following economic expansion) have fuelled secondary school enrolment.[8]

Direct historical comparisons between Europe or the USA and developing countries are problematic, since adult literacy rates commonly exceeded 50 to 60 per cent in many regions of Europe by the early nineteenth century. In contrast, developing countries have attempted to expand secondary schooling before the widespread adoption of such cultural commitments to literacy or quality primary schooling is in place. This expansion of coverage has usually been argued on manpower planning grounds, specifically, the need for government civil servants and leadership for business and industry.

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[8] For historical reviews, see Tyack, D. 1974. *One best system,* Cambridge (MA): Harvard University Press.
Bledstein, B. 1976. "Women's education from demographic and health surveys". Paper presented in Bangkok, March. (Unpublished manuscript). In Demographic and Health Surveys, 1989. *The culture of professionalism.* New York: W.W. Norton. Collins, R. 1979. *The credential society: an historical sociology of education and stratification.* New York: Academic Press.

To align secondary education with complex labour demands is a headache for most educational planners. Given the sub-sector's links with university access (for the most part in urban areas) and the industrial workforce, secondary schools predictably focus heavily on the requirements of the urban wage sector. Conversely, lower-secondary schools, especially those in rural areas, are increasingly targets of sub-sector expansion. Governments wishing to consolidate literacy and numeracy gains from primary schooling are increasingly opting to fold lower-secondary schools into their primary education systems, sometimes relabelling this 'basic' education. This is a kind of repositioning in which coverage is expanded through the lower secondary grades and vocational subjects, including agriculture, are introduced for the benefit of farm employment.

However, the increasingly commonplace view that general secondary education is the best preparation for entry into labour markets and for further training is not well understood in poor countries with high youth and rural unemployment. Whether the labour market utility function of general secondary schooling will replace the traditional view that vocational schooling holds the key to addressing youth unemployment remains an enormous question. Examples of positioning secondary education specifically for the benefit of rural families and youth who work outside the wage sector are hard to find.

Another complexity limits the capacity of governments to tighten the link between secondary education and labour demands: trends within the formal wage sector and the informal economy – the number of jobs and the types of skills required – are difficult to estimate. Twin assumptions encourage secondary educators to impose greater vocationalization on the curriculum: (1) that technology is creating many more jobs that require more specialized skills, whether for lathe operators or chemists, and (2) that providing these skills within secondary schools is cost-effective. Evidence on the first assumption shows that during early periods of economic development, it is rather the unskilled and semi-skilled jobs in trade and industry that grow most quickly, and not the skilled occupations that require secondary education preparation.[9] In addressing the second assumption, the World Bank and others have undertaken extensive empirical work that suggests specialized skill training is best left to employers, except in areas where labour shortages are acute and persistent.

Decision Point 2: Institutional facilitation of the transition to adulthood

In a growing number of middle-income countries, the major question facing education policy-makers is not whether secondary education should be expanded, but whether the sub-sector excessively dominates the lives of young people, warehousing students in schools that isolate them from actual work experience and adult social roles.[10] Since the 1950s, analysts within Europe and North America have argued that a self-contained 'adolescent society' has intensified the alienation of teenagers. This debate has intensified in Southern and Eastern Europe, where youth unemployment is again on the rise. Remedies in the West have varied widely. The German apprenticeship model tracks youth into a vocational stream, linking them with private firms. The United Kingdom's revamped youth training scheme is a conventional school-based vocational training programme. Australia now pays disadvantaged youth to remain in, and to graduate from, a general secondary school.[11]

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[9] Carnoy, M.; Marenbach, D. 1975. "Returns to schooling in the United States", *Journal of Human Resources*, 10: 312-331. Blaug, M. 1976. "The empirical status of human capital theory: a slightly jaundiced survey", *Journal of Economic Literature*, 14: 827-855; Knight, J. and Sabot, R. 1990. *Education, productivity, and inequality*. New York: Oxford University Press

[10] A fascinating but mildly facetious paper on this topic was written by Professor William K. Cummings, then at Harvard University, entitled "Why not terminate secondary education? An exploratory essay on talent development". Paper drafted at Harvard University (MA), 21 November, 1991.

Governments in developing countries respond to the 'transition to adulthood' issue in one of three ways. First, they simply expand the secondary education sub-sector, hoping to meet rising social expectations and reduce immediate employment demands by youth. Second, they continue to formalize and expand vocational training programmes, despite declining popular demand for non-academic training. The extent to which private firms are involved in training apprentices – as opposed to a vocational training programme that occurs far from any real workplace – is a critical determinant of the success of these programmes. Third, many countries now institute formal youth service programmes, which provide practical experience for youth after they complete their secondary schooling. Secondary-school graduates in Botswana and Nigeria, for instance, serve in a rural village for one year before they can apply for admission to the university.

In the USA, many high schools award academic credits to students participating in work experience programmes, involving jobs with private employers or social service agencies. The influence of these co-operative education programmes on the school performance and future employment success of pupils is the subject of considerable empirical research. Their effects can be positive, depending on the quality of the job in which the pupil is placed. Whether such 'youth transition' programmes are feasible within developing countries is another issue on which there exists almost no evidence. The extensive evaluation work on Colombia's SENA job-training programme does suggest that when apprenticeships are organized within firms, future employment effects can be positive.

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[11] For reviews of this issue in European countries, see Haddad, W.D. 1987. *Youth unemployment in the EMENA region.* EDT Discussion Paper 76. Washington, D.C.: World Bank; Northdurft, W. 1989. *School works: reinventing public schools to create the workforce of the future.* Washington, D.C.: German Marshall Fund; Vickers, M. 1991. *Building a national system for school-to-work transition: lessons from Britain and Australia.* Somerville (MA): Jobs for the Future.

Decision Point 3: Selectivity versus mass opportunity

Secondary education has traditionally been a selective institution, sorting out a small proportion of youth for wage jobs in the religious, military, government or private organizations. Despite steady rates of expansion, the sub-sector in many developing countries remains highly selective, especially at the upper-secondary level. Student spaces are limited and students compete fiercely for the even fewer number of spaces available at national universities. The share of primary-school graduates who win a place in secondary school exceeds 80 per cent in Asia but falls below 40 per cent in sub-Saharan Africa, and this is after huge numbers of students have dropped out en route to the inevitable leaving examination. Primary-to-secondary transition rates vary enormously among countries, and even across nations within the same region. In Malawi, for instance, just 7 per cent of primary-school graduates find a place at the secondary-school level. This proportion is 90 per cent or more in the Philippines and Venezuela. These differences represent enormous variability in how broadly or narrowly educational opportunities are structured.[12]

The selectivity of secondary schools (or particular streams within the overall sub-sector) obviously has implications for the equity with which educational and job opportunities are allocated. Governments often decide that access to secondary schooling must be opened more widely to signal that society is becoming more equitable – hence, the strategy of making lower-secondary grades part of the primary school system. In most developing countries, upper-secondary schools retain their selective character. Making the entire sub-sector free of selection constraints is simply not affordable for most countries. Many countries have attempted to create separate tracks: high quality, government-financed secondary schools, and low-quality, community-secondary streams. The reverse is true in Latin America, where the private, often religious secondary schools are prestigious and expensive, whereas public schools are affordable but lower status and lower quality. In any case, those few countries that have made secondary schooling universal – as have Japan and the USA – have discovered that sorting and selectivity still occur via the educational structure. It simply becomes a function of either the status of the graduate's particular secondary school, or the graduate's own performance on standardized measures of performance. In some cases, universities become stratified to protect the status advantages of certain social groups (and the quality of certain institutions).[13]

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[12] For a summary of this and other issues affecting the sub-sector see Fuller, B. and Holsinger, D. 1993. "Secondary education in developing countries: issues review". Education and Social Policy Department, draft, March. Washington, D.C.: World Bank.

Policy adjustments may place secondary education in a compromise position between selectivity and the preservation of quality versus widening access to more primary school graduates. This dilemma is contained within a larger question: can secondary schooling provide more equitable social mobility, independent of the family background and prior social class of youth? The rules for entering high-quality secondary schools should not be unduly influenced by inherited characteristics. Student motivation to achieve is presumably higher when educational opportunities and incentives are allocated without regard to social status.

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[13] For a review of selectivity issues in Japan and the USA, see Baker, D. and Stevenson, D. 1990. "Institutional context of adolescent transition: going from High School to College in the U.S. and Japan". *Journal of Adolescent Research*, 5: 242-253.

For purposes of governments seeking to reposition secondary education, this issue can be broken down into two empirically researchable questions. First, is access to secondary schooling determined by family background, or has primary schooling erased these advantages and placed all students on an even footing? Then, second, does actual achievement in school, rather than family background, influence occupational mobility? An extensive longitudinal study in Chile, for instance, found that access to secondary school was influenced partially by the children's family background, but that after graduation, the quality of the secondary school and the achievement levels of its students determined occupational status and wage profiles. Similar evidence is now available from Brazil, Colombia and Ghana. Conversely, a careful study in Zimbabwe found that social-status background both strongly determines who gains access to high-quality secondary schools and shapes the learning achievement of graduates. In Kenya, three types of secondary schools (government-maintained, government-supported, and local self-help) serve youth who are often of quite different SES backgrounds. Here, too, among those students who enter, achievement levels and eventual wage gains of secondary-school students are a function more of differences in the quality of schools than of family background. By relating school performance to jobs in Kenya and Tanzania, this study also reveals how the structure of labour (public versus private-sector job demand and wages) conditions, whether wage effects or job mobility, are due to the secondary-school performance of students.[14]

In sum, efforts to broaden access to secondary school are well intentioned. But slight adjustments in the sub-sector's positioning (expanding the size or modifying the functional balance between curricular emphasis and wider access) will not necessarily be effective in overcoming social-status advantages, although, in absolute terms, numbers of low-income children may gain access to secondary education. The achievement and subsequent mobility of students who are able to secure a secondary school space will depend less on family origin and more on the quality of schools they attend. Additional research in developing countries must be undertaken to inform the heated policy debates about whether secondary education can truly broaden equity.

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[14] Knight, J. and Sabot, R. 1990. *Education, productivity, and inequality.* New York: Oxford University Press.

Decision Point 4: Common schooling versus a mixed market of providers

Secondary schooling is often controlled by central government, even in societies where primary schooling has been a local responsibility. Secondary schools are typically quite expensive. The selection of elite members of society – managers and professionals – is a task closely watched by the political elite. Intellectuals and their scholarly organizations, academic journals, societies for the advancement of the scholarly disciplines, and the integrity of a national language are all advanced by a common, centrally administered form of secondary schooling. For these reasons, the central state authority has retained close control of the sub-sector. But can the governments of developing countries feasibly supply secondary school places at a pace responding to growing popular demand?

Estelle James has argued that private schooling in developing countries is to be explained mainly in terms of an 'excess demand' for schooling, the result of a limited supply of school places in the public school system.[15] 'Heterogeneous demand' for private schooling (stemming from differences in the cultural, religious and socio-economic background of parents) is likely to be more relevant in richer countries. There is a positive relationship between the size of the enrolment ratio and the extent of private education, at any given level of schooling. As primary education enrolments expand to achieve full coverage, then 'excess demand' pressures for private schooling are transferred to the less extensive secondary level of education.

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[15] Papers by Estelle James provide detailed information on policy alternatives and country experiences with regulating private schools. See James, E. 1987. *The political economy of private education in developed and developing countries.* EDT Series 71. Washington, D.C.: World Bank. For Japan, see James, E. 1988. *Public policy and private education in Japan.* New York: St Martin's Press.

The encouragement of private markets in secondary education, through the development of private schools, may reduce subsidization of education and achieve greater cost-recovery. If not, it may at least foster greater parental choice and diversity of educational provision, perhaps through vouchers. These issues are usually discussed in the context of policies for secondary education as a whole, but they may be far less relevant for lower-secondary education (LSE), as it becomes increasingly to resemble primary education.

In many developing countries, the private sector already enrols a sizeable proportion of all secondary pupils, ranging from 38 per cent in Colombia, to 41 per cent in Nigeria, and to 49 per cent in India. This private sector is very diverse, including low- and high-quality proprietary schools, as well as schools sponsored by churches and non-profit organizations.[16] Development agencies generally support an even greater role for private-school providers, for cost-effectiveness reasons. This drift towards encouraging private provision and financing raises three issues associated with the positioning of the sub-sector:

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[16] In many countries (Latin America excepted), private secondary schools are considered to be low-quality institutions, serving youth who fail to win a place in a higher-quality government school. To the extent that achievement in primary school is determined by family background, the growth of private schooling may broaden access but also reinforce social-status inequities. For evidence from Zambia, see Kaluba, L.H. 1986. "Education in Zambia: the problem of access to schooling and the paradox of the private school solution". *Comparative Education*, 22(2): 159-169. For Ghana, see Bibby, J. and Peil, M. 1974. "Secondary education in Ghana: private enterprise and social selection". *Sociology of Education*, 47: 399-418.

Will a greater diversity of providers increase or reduce any economic benefits from secondary schooling? Where private schools are more effective at boosting achievement, productivity gains may be higher. Where the quality of private schools is low or local social agendas dominate the curriculum, gains in achievement and/or technical skills may actually be lower. Encouraging greater private investment in schooling in an unrestricted fashion may simply feed the process of credentialism.

Will the expansion of private secondary schools erode meritocratic and equitable incentives? The stratification of school quality, apparent when private schools serve affluent families (or offer low-quality education to poor families), may reinforce social-status inequities, rather than equalize opportunities.[17]

How will the expansion of private schooling advance national and local social objectives? Koranic schools, for instance, do effectively absorb 'excess demand' for schooling, but how do they advance the national interest in establishing a common language? Private schools are rarely effective at advancing public interests – for example, AIDS awareness or maternal health practices.

Decision Point 5: The significance of the lower/upper-secondary division for the optimal positioning of the sub-sector

The above considerations may account for the pattern of data shown in recent papers by Estelle James and background tables found in 'Education in sub-Saharan Africa', both of which show that private schooling is considerably less prevalent in primary than in secondary education in developing countries.

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[17] Little evidence is available on this issue. But initial research does reveal that a sharp stratification of school quality between public and private schools is apparent in both Chile and Uruguay. See a brief review by Tedesco, J.C. 1991. "Privatization reforms: how effective are they in Latin America?" *The Forum for Advancing Basic Education and Literacy*: 1-10.

Although we do not have figures at hand on the extent of private school enrolments at the LSE level (an effort should be made to collect such information), it seems likely that it is lower on average than at upper-secondary education (USE). As LSE comes to resemble primary education more closely over time – high enrolment ratios, standard curricula, etc. – it would also be expected to display a smaller proportion of students enrolled in private schools than for USE. Indeed, the expansion of publicly provided LSE may, initially, lead to a switch from private to public schooling, as previously fee-paying students enrol in the subsidized public sector.

With LSE increasingly becoming part of 'basic education' (largely standardized, universal and with specific educational objectives) then the scope for policies to encourage diversity and differentiated parental choice is weakened. As LSE becomes compulsory in some countries – a badge of citizenship – the case for fee charging is less strong. There is scattered evidence that, as with primary education, externalities are more sizeable for LSE than for USE; if a more consistent marshalling of the evidence confirmed this, then the arguments for reduced subsidization of secondary education become less pressing at the LSE level. In sum, as LSE becomes more to resemble primary education in many countries, policies pertaining to the primary level become increasingly relevant to LSE. The policy divide between LSE and USE then becomes increasingly sharper.[18]

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[18] More evidence is needed on this point. However, Walter McMahon has several excellent empirical studies strongly supporting the contribution of secondary education to economic development and the difference between returns to investments in LSE and USE. See especially, McMahon, W. 1994. "The contribution of secondary education to growth and development in Japan, South Korea, Malaysia, Thailand and Indonesia ". Paper dated 17 November (unpublished working paper).

Chapter V

Differentiating national curricula as a response to increased coverage

The general issue is this: while a traditional academic curriculum may be appropriate for upper-level secondary education in a developing country with a relatively low upper-secondary school enrolment ratio (for example, 20 per cent), the path towards much higher enrolment ratios (in excess of 50 per cent) will require much greater curriculum diversity to meet the differing educational needs of different groups. It may well be that vocational schools per se will not be the ideal solution to the need for curricular diversification (though recent research for Hong Kong and for Israel has suggested that vocational schooling may perform well in certain settings if the employment environment is favourable); but if not vocational schooling, then what other forms of secondary schooling (either existing or to be developed) would be appropriate? Indeed, for many (LSE) completers, non-schooling programmes, such as apprenticeship, may be more appropriate than continued secondary schooling at the upper level. Thus, it becomes increasingly necessary to define the range of objectives of USE, and to fashion alternative schooling experiences appropriate to meeting these objectives.

The key ideas in curriculum can be divided into three categories: (A) Organization and subject content; (B) Vocationalization; and (C) Control. These categories overlap and several ideas could be placed logically in more than one category. Developing countries and development agency projects have dealt with most of these ideas at one time or another.

1. Organization and subject content

A single nationally set curriculum consistently delivered is a successful educational procedure at the primary level. Where flexibility and student choice are present there is widespread consensus that this should begin after primary school, although whether or not flexibility should begin in lower secondary is still debated. The trend appears to be one in which the mandated curriculum of the lower-secondary grades, or their equivalent by whatever name, is a linear extrapolation of primary school.

The decision as to whether a curriculum should prepare specialist or generalist knowledge and skills is often decided on the basis of whether a particular level is seen as preparatory or terminal.

Primary schools are almost always general purpose institutions with considerable social and political consensus surrounding their mission, which is, simply put, to prepare all children for competent adulthood by giving them basic literacy and numeracy skills and, in many countries, explicitly a set of moral values. The situation at the secondary level is vastly more complex. Nevertheless, a growing number of countries, often for political and economic reasons rather than pedagogical, put together in a single, all-purpose school, students with different needs, from different backgrounds, abilities and interests. The question most often asked by policy-makers is, "Do the financial economies and the social integration hoped for by this 'comprehensive' arrangement outweigh the problems created by attempting to handle such diversity in a single place?"

However, curriculum developers, especially in poor countries, increasingly ask whether the school promotes opportunities to learn in the community. Should the school use the social and physical environment as laboratories for learning? As significant changes in science, technology and lifestyles occur more rapidly, the school will inevitably become more closely linked to markets and the world of work. School walls must be easily permeable and the formal curriculum should reflect this need.

Non-formal education (NFE) is growing, especially in parts of the world where primary education approaches universal coverage, and the remaining populations outside school live in remote or isolated places. Yet curriculum modifications are necessary and the standard instructional approach tends to produce unsatisfactory results. How many non-formal options should there be? For which students should they be designed?

In the majority of poor countries there appears to exist growing recognition that science education is an important element in the national primary and secondary curricula.[19]

This is due to both the now commonly recognized relationship between quality research and development in science and technology and stable economic growth, and also the need to begin to prepare students more effectively for future scientific and technological employment. Agriculture, health, nutrition, population control, environmental management, and industrial development are a few of the areas which benefit directly from a wider understanding of science and technology. At its most primary level, this includes basic skills relevant to the daily needs of people in undeveloped economies, starting with health and nutrition and moving into the basic sciences at the secondary level to interest and prepare students for the transition to higher education and possible scientific and science-based studies. Too often, the students who might become prospective scientists and engineers reach the university with too little exposure to basic sciences and therefore without the desire or ability to pursue scientific studies. At the same time, unfortunately, science education is not only one of the most costly segments of the school curriculum, but is unsatisfactory to the vast majority of students and is often extremely challenging in terms of teacher training and retention.

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[19] For the most comprehensive review of how best to plan investment in science at the secondary level see Caillods, F. et al. 1997. *Science education and development: planning and policy issues at secondary level.* Paris: UNESCO/IIEP and Pergamon.

Science education is therefore in a position of privilege and peril. It is privileged because decision-makers recognize the relationship between good science and economic development. In many developing countries this recognition has resulted in additional support for science education. Moreover, in the majority of poor countries there appears to be a growing recognition that science education is an important element in the national secondary curriculum. ‘Science for all’ is a frequently voiced rallying cry. At the same time, science education is imperilled by: (a) unrealistic expectations for quick results; (b) improper and inadequate teacher training; (c) a lifeless, exam-driven curriculum; and (d) expensive and outdated reliance on traditional classroom methods and laboratory equipment. Slower-than-anticipated impact in any of these areas may cause prejudicial backlash and reduced support.[20]

Laboratory-based instruction is prohibitively expensive for all students. As coverage increases, countries are deciding to limit separate and laboratory-based work to either a few select students and schools or to only senior secondary schools. Topics from physics, chemistry, biology, geology, astronomy and physical anthropology are then often combined into ‘General Science’ which is offered to non-specialists and to lower-secondary and/or basic education students.

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[20] See Ware, S. 1992. *The education of secondary science teachers in developing countries and secondary school science in developing countries: status and issues*. Education and Employment Division. Population and Human Resources Department. PHREE Background Paper Series, Document PHREE 92/68. Washington, D.C.: World Bank.

2. Vocationalization of the secondary curriculum

The issue of education for all versus elite preparation is more than simply a question of coverage. Most countries have based their education curricula on the needs of their elite as opposed to the needs of their masses. Yet, as coverage expands, the questions of vocational relevance and quality invariably arise. This is so because the single-purpose elite preparation, which characterized the curriculum when enrolments were small, is not suitable for the needs of the diverse majority.

The debate over the desired degree of vocationalization of the school curriculum is shifting ground as the nature of the market for schooled labour changes. This debate is worldwide and intense. At the heart of the new debate is a redefinition of the school courses, which are vocationally relevant. Science, mathematics and English, all traditionally viewed as academic in the sense of college preparatory, are increasingly demanded for their vocational relevance. The case for a 'new vocational curriculum' can be stated in these terms. At the close of the Second World War, people in industrialized countries expected to have a single career throughout their productive lifetime. Moreover, skills useful at the start of their careers were expected to remain so throughout their job tenure, with only minimal retraining and updating required. Under these conditions, specific job-skills training was valued for its immediate and long-term relevance to occupational requirements. However, the workplace changed. Jobs were lost from heavy industry and agriculture to service and high-technology sectors. Even the remaining agriculture, equipment repair, and manufacturing jobs began to require higher levels of communication (reading and writing) and mathematics abilities. Market changes have seen massive redeployment of workers across sectors. Lifetime job security in a single sector gave way to needs for a flexibly trained and rapidly redeployable labour force and, with these changes, came a redefinition of certain fundamental education requirements. Suddenly, the general curriculum was vocationally relevant for a much larger share of the school-age population, including those not college bound.

A large empirical literature has developed over the past 25 years arguing strongly against vocational schooling, traditionally defined on cost-benefit grounds. This literature, which compares labour market outcomes in earnings and employment and cognitive achievement test scores of vocational schooling with general schooling, mainly at the secondary level, has been extensively reviewed.[21] Diversified secondary education, as we have already pointed out, is a quite different educational product, with different inputs and objectives, and different cost structures. One should not confuse findings and conclusions regarding vocational schooling with diversified secondary education.

Psacharopoulos and Loxley[22], who examined the cost-effectiveness of diversified education in Tanzania and Colombia, conducted the most familiar study of diversified schooling to date. Choosing two different kinds of diversified systems, the study compared the costs and outcomes of diversified education with those of conventional academic and purely vocational secondary schooling in terms of what was learned and what was later accomplished either in economic or education activities.

Psacharopoulos and Loxley examined the equity, internal and external efficiency and the economic efficiency of diversified secondary schools using survey data from 10,000 students in secondary schools in Colombia and Tanzania. Some of the schools had their curricula 'diversified' with the funding assistance of the World Bank. This study was, in part, designed to evaluate the economic soundness of curricular diversification as a mechanism of project-based development aid. Educating students from diversified secondary schools in both countries would be compared to educating students from schools with a traditional academic or college preparation curriculum in terms both of the cost of their schooling and the cognitive achievement and employment prospects resulting from it.

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[21] See Zymelman, M. 1976. *The economic evaluation of vocational training programs.* Baltimore: Johns Hopkins University Press; Psacharopoulos, G. 1987. "To vocationalize or not to vocationalize? That is the curriculum question", *International Journal of Educational Development,* 33(2): 187-211; and Tilak, J. 1988. "Economics of vocationalization: a review of the evidence". *Canadian and International Education* 17(1).

[22] Psacharopoulos, G. and Loxley, W. 1985. *Diversified secondary education and development evidence from Colombia and Tanzania.* Baltimore (MD): Johns Hopkins University Press. We examine the evidence from this study disproportionately here, due to the frequently misunderstood nature of its findings.

The popular perception of the Psacharopoulos and Loxley book is that it provided evidence that the diversified curriculum approach was a high cost and low gain activity, part of the generally misguided effort to provide pre-vocational training at the secondary level and something to be avoided by individuals, governments and development agencies. Some education economists, planners and social scientists have viewed this work as 'hard' economic evidence mitigating 'soft' education, a thought that might promote diversified curriculum efforts on education grounds alone. First-time and careful readers of the work may find this characterization a 'straw man', not easily defensible. And they would be correct, again, from two careful readings. Yet many development workers in the field of education appear to have read only the final chapter of the book or its executive summary, as many of them believe that this book casts a credible shadow of doubt on attempts to insert vocational subjects into instruction at the pre-tertiary level. It does not.

Much of the confusion resides in the book's internal contradictions. In their closing summary, the authors, after admitting the dangers of deriving policy implications from a study of graduates in two countries for whom the only data on post-graduation job performance came just one year following graduation, concluded, "Diversified programmes cannot be justified on the basis of the null hypothesis that they are no better and no worse than conventional curricula. The data do not support this criterion". So, if diversified programmes are not better (or worse) than the general academic programmes, how can they be justified? What exactly did the Psacharopoulos and Loxley study uncover?

The authors looked at a diversified secondary school as if it were about the same as a vocational school. This was actually true in one of their case studies, Tanzania. But they overlooked the fact that the new diversified schools drew students from a lower-than-typical SES family background. Hence, what might have been a major finding concerning cost-effective ways of reaching new and non-traditional populations of secondary students was eclipsed by the apparent need to cool the growing enthusiasm for diversification. Consider the preface of the Psacharopoulos and Loxley volume written by Aklilu Habte, an Ethiopian national, and then director of the Education and Training Department of the World Bank:

"Compared with schools offering only conventional curricula, the diversified schools recruit more students from low-income backgrounds and provide better cognitive skills to their graduates (emphasis added). However, it costs more to educate students in diversified schools than those in control schools. Moreover, despite their superior cognitive skills, graduates of diversified schools do not find jobs more easily and do not earn more than the graduates of control schools".

The sample schools actually had students from a lower socio-economic group as compared to traditional academic schools, but produced graduates with superior achievement test scores in academic subjects. Cost is relevant, of course. How much more does such a school cost? And is the cost justifiable in terms of the superior cognitive skills produced? After all, cognitive-skill acquisition is fundamentally what schools are about. To think that we may have an important clue here (not to what costs more and is therefore unworthy, but as to what costs about the same and yields more of the product urgently needed in society) is an exciting prospect, but sadly not what these authors were concerned with.

3. The Colombian data

In the 1970s, education policy-makers in Colombia faced a dilemma. How could they expand secondary education coverage in a way to meet growing egalitarian demands and still provide an education relevant to the students, knowing that the majority of them would not continue to a still largely elite tertiary system? Their solution was to introduce a new type of school called the INEM secondary school, the acronym standing for Institutos Nacionales de Educacion Media (National Institutes for Middle Education). These schools were 'comprehensive' secondary schools or diversified secondary schools in the sense that a practical bias was introduced into the curriculum by means of some pre-vocational courses.

Although Psacharopoulos and Loxley interpret the government's reason for creating the INEMs as trying to match school-derived skills with jobs, they failed to recognize a second purpose. The new curriculum might also be a better match with the broader interests of a student body increasingly reflective of society at large, rather than the interests of the social elite bound in unison for the university.

Naturally, the new INEM schools cost a lot to create. New schools regardless of curriculum are expensive, but required vocational equipment drove the cost up still further. Naturally, the new schools reflected the best that available money (with the World Bank's financial help) could buy. And naturally the costs were higher than those of older traditional schools. It is therefore reasonable to expect that unit costs of producing a graduate from these new schools might exceed those of the older established schools.

With this thought in mind, Psacharopoulos and Loxley collected data on the cost-effectiveness of the new schools when compared to the older academic and vocational schools. The methods employed were rigorous and reasonable and derived data from representative samples of students of the different school types. Students were sampled from INEM or diversified schools, traditional vocational and traditional academic schools.

Not surprisingly, affluent Colombian parents preferred academic schools for their children, for whom the university was the exclusive post-secondary option. Affluent families prefer academic schools for their children. The results demonstrated clearly that INEM students came from families where income was lower, the father's completed formal education was less, and the number of books at home were fewer in number as compared to the control schools (p. 65). Given all we know about the influence of SES on school achievement, the results of the achievement test comparisons should have been straightforward. INEM students predictably would have had lower-achievement test results.

However, in their final summary analysis of the Colombia data, Psacharopoulos and Loxley came to a remarkable but little cited conclusion: "Based on comparisons of costs and achievement gains in academic and vocational knowledge between INEM and control schools, INEM industrial, social service, and agricultural streams are substantially less expensive than their control counterparts. Combined with the fact that these programmes substantially boost achievement scores, they are unquestionably successful. And although the INEM academic and commercial programmes cost more than their control counterparts, they also substantially boost achievement" (p. 93).

Imagine, then, a large and rapidly developing country that created new diversified secondary schools with an innovative and attractive diversified curriculum in a planned attempt to accommodate a non-traditional (low SES) student clientele, and then found that these new schools, in all but two curricular streams, both cost less and produced higher academic test scores than the traditional schools! That is what happened in Colombia and it was a truly amazing performance. But almost no one familiar with this study is able to recall this salient finding.

4. The Tanzanian data

What, then, of the Tanzanian experience with diversified curricula? Tanzania, at the time of this study, was a nation in the throes of a socialist experiment. The popular and charismatic president, Julius Nyerere, had carefully selected education as the social sector he would use to illustrate the importance of the state or the collective over individual interest.[23]

Accordingly, secondary education was positioned to provide an adequate supply of skilled manpower, and manpower planning models were used as the basis for both the size of the school intake and the nature of the curriculum. To achieve state-mandated quotas, many lower-secondary schools, Grades 8 to 11, were converted into diversified schools, in which between 25 and 40 per cent of the instructional time was directed towards vocational subjects. Psacharopoulos and Loxley therefore were able to compare traditional academic lower-secondary school students with students in a particular vocational stream of a diversified school in terms of cost and achievement.

Unlike the Colombian case, the Tanzanian vocational streams all had somewhat higher unit costs than the purely academic school (public) unit costs. The biggest cost difference was 19 per cent. The results of cost-effectiveness analyses (where achievement tests of mathematics and language are the measures of effect) are mixed and it is not our intent to force the reader into a detailed re-examination of all the results for the three separate comparisons of diversified schools (technical, agricultural and commercial) with the academic control group. A quick summary is as follows. As stated above, the diversified curriculum produced modestly higher per-pupil costs. For technical schools, both academic and vocational achievement scores were higher than for the academic control school students; the commercial school students lost a small amount in academic tests to the control group and the agricultural school students, for whom the cost difference was the highest at 19 per cent, the achievement gains in agricultural subjects were large, but in mathematics and English almost no difference was found. As to achievement test scores, the results, similar to Colombia, encourage the conclusion that the diversified curriculum leads to higher performance than characterizes the privileged academic schools.

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[23] Nyerere, J. 1967. *Education for self-reliance*. Dar-es-Salaam: Government Printer.

Although the Tanzanian case for diversification is less convincing than the Colombian one, it is also different. First, diversification of the secondary curriculum was less a conscious goal than was the creation of 'vocational' schools. The academic component was not forgotten, but these schools were single-subject (i.e. commercial, technical, etc.) schools, not traditional academic schools in which some range of vocational content had been included. These vocational schools (and Psacharopoulos and Loxley frequently refer to them as 'vocational schools' not 'diversified schools') display the high capital costs associated with vocational schools. Second, it was not the government's intention to typically increase the intake of the secondary system and to modify the curriculum so as to better accommodate a broader social background spectrum. In this sense, too, the experiment in Tanzania is very different from that of Colombia.

But in another way the authors' overall conclusions regarding the two countries are remarkably similar. Under the general heading of 'Cost-Effectiveness of Cognitive Achievement' for the Tanzanian case, Psacharopoulos and Loxley conclude:

"Thus it appears that technical schools, though costing more than control schools, yield a *substantial* (emphasis added) increase in both academic and vocational knowledge over that of the academic control group. Likewise, both agricultural and commercial students gain in vocational knowledge as the result of higher per-student costs, but they show little or no increase in academic knowledge relative to the control group" (p. 179).

We should ask then whether the additional money spent for diversified schools in Tanzania and Colombia was the most effective way to boost learning among secondary students. Was it an effective policy for dealing with increased demand for secondary-level schooling from a non-traditional segment of society? The Psacharopoulos and Loxley study does not address these questions directly. The investment in diversified schooling did boost learning and that is an important matter for national educational planners trying to raise school quality as measured by student learning. Was there a better way to do it? We do not know from this study. What we do learn from the experience of two countries is that the addition of vocationally relevant subjects into the purely academic stream may cost less (Colombia) or very little more (Tanzania), but will probably boost learning both in the vocational subject explicitly targeted and, surprisingly, in general academic subjects as well!

5. Diversification as a response to social demand

Academic secondary schooling, narrowly defined, may be educationally inappropriate for increasing numbers of students coming into USE. It may also have perverse societal effects in those many country settings where secondary school completion is combined with open admissions to highly subsidized universities. It may raise the educational aspirations of large numbers of USE completers beyond individual capacities, in turn leading to excess demand. It may also lead to political pressure for expensive university education. University enrolment expansion, in response to social pressures but unmatched by additional resources, may in turn result in declining quality of university education and graduate unemployment. On the other hand, the practice in some countries of using alternative, non-academic terminal secondary education programmes as an instrument for suppressing the private demand for university education, carries its own dangers and should be avoided. Such diversion policies may be both (a) very expensive in relation to general academic secondary education, and (b) ineffective in leading to jobs, let alone enhanced earnings. Whatever alternative USE educational programmes are developed, they must be so designed to meet the needs of the student populations they serve, as well as those of society as a whole.

In Asia, Latin America and, occasionally, in Africa, the lower-secondary level is being attached to the primary level to form a longer period of required 'basic' education. This is often being done without changing the lower secondary to fit its new purpose. The wisdom of this should not go unquestioned. The question is: what should the curriculum for basic education be for students who are already literate and numerate but who may not go on for further school after their basic education ends?

Lower-secondary education. Lower-secondary education is general, non-specialized and largely a continuation of primary education; indeed, this has received overt recognition in some countries (and particularly in Latin America) with the demise of lower-secondary education as such (the 'middle school') and its absorption into primary education, together constituting 'basic education.' In Jordan, the term 'preparatory education' is used to refer to the three years of schooling beyond primary education. Upper-secondary education, whether terminal (preparation for the labour market in the form of vocational/technical education or teacher training) or preparatory to higher education, is typically less unified, more specialized and has more specific objectives; it is also more costly.

Ultimately, the division between lower and upper levels of secondary education coincides with the divide between general, universal 'basic' education (primary and LSE) and that of selective, specialized, differentiated occupation-oriented education (USE and higher). Many of the broader societal aims of educational expansion could be achieved at the lower level (together with primary education). Indeed, evidence is accumulating to suggest that certain non-market, externality benefits of secondary education, not available from less mature students of primary-school age, may be more sizeable at the lower end of secondary education. Many of the major policy aims, such as 'education for all' – the goal of increasing equitable access and particularly equalizing enrolment rates for girls and boys – are practicable objectives for LSE. They may be regarded as both possible and meaningful long-term objectives for the lower-secondary education cycle; beyond this level, they are probably neither desirable nor achievable.

With the adoption and implementation of policies for 'education for all' at the level of primary education in many countries, it becomes increasingly important to direct attention to the widening of access to LSE. This is not just because LSE constitutes the next step up the educational pyramid – the next level of education on the agenda – but rather because many of the objectives of a broadly based provision of primary education are secured only with continued schooling at the LSE level.

LSE brings additional benefits of its own. Much attention in policy discussion has been accorded to the externality effects of primary education, yet accumulating empirical research has demonstrated that non-market benefits are forthcoming from secondary education, particularly from LSE.[24] Part of these benefits are captured ('internalized') by the family and, though not normally included in measured private benefits, should be seen as augmenting private (family) rates of return. But they also represent externality benefits accruing to the wider society. Included in these benefits are those of lower fertility, better within-family health care (particularly for children) and better nutrition. These findings are highly relevant for a number of reasons. First, many of these benefits seem to accrue particularly at ages that are covered by the lower-secondary cycle (Grades 7 to 9), an issue of some relevance to the question of subsidizing lower-secondary education. Second, the benefits of this type from girls' education have been shown to be larger than those from boys', an argument for improving the gender balance in LSE enrolment.

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[24] For a comparative empirical analysis see McMahon, W.W. 1994. "The contribution of secondary education to growth and development in Japan, South Korea, Malaysia, Thailand and Indonesia". Paper dated 17 November (unpublished working paper).

The nature of the transition from primary to lower-secondary education will need to be studied to identify particular factors that may account for unduly low transitions. Most school systems display a falling off of enrolments with grade (and, indeed, policies may be devised to raise these transition proportions from grade to grade, i.e. to improve internal efficiency). The issue is whether the relative size of progression from primary to LSE was clearly smaller than grade progressions in primary school; this issue can be probed by inspecting the shape of enrolment pyramids for particular countries. If such differences were found, this would indicate the need to delve further into the causes of such differences and to fashion appropriate policies.

It is possible that the formal separation of primary and LSE into different schools may be a factor lowering the transitional proportions to LSE. If so, then the complementarity of primary and lower-secondary schooling could be formally recognized (and transitions raised) through incorporating lower-secondary education into primary schooling by extending the number of grades covered by primary schooling. Such schools offering 'basic education' could constitute the main mechanism through which enrolment growth at LSE age is achieved. Alternatively, middle-level schooling could continue as a distinct institutional form, particularly if the impediments to expansion did not lie in low primary-LSE transitions. The arguments for and against alternative institutional arrangements need to be marshalled in the light of differing practice across countries, and particularly taking into account experience with the extended primary school that is current practice in many Latin American countries.

Impediments to expansion on the supply side will need to be identified and, in light of these findings, policy reform designed, where appropriate, to facilitate expansion. The availability of classrooms, other physical facilities and trained teachers may constitute real barriers to significant expansion in the short run; fashioning and implementing policies to ease these bottlenecks and secure the quality assurance (or at least to avoid quality decline) of expanded LSE are critical.

Attention needs to be given to the role that pre-vocational studies should play in the LSE curriculum. Popular in many countries, they are seen as a means of adding a 'practical' dimension to a study programme that is predominantly general in nature. There are two general problems with such studies. First: since they are largely based on (outdated) workshop instruction, they tend to be costly; questions of the extent of benefits in relation to these higher costs come to the fore. Second, and related to this: such courses are seen, generally incorrectly, as imparting labour market skills. While there may be a case for adding a practical element to LSE, this is unlikely to take the traditional form of workshop-type practical instruction. Nor should it be thought that such instruction is really 'vocational.' Rather, the case for their inclusion may lie more in the direction of imparting general 'communication' skills (such as technical letter writing, perhaps the simple use of computers) or practical 'home maintenance' skills (such as simple electrical repairs) than in 'pre-vocational' courses of the more traditional type.

Upper-secondary education. The central issue here is: what type of secondary schooling should be provided at the upper level as the system expands, and the efficacy of vocational schooling. Where the USE enrolment ratio is relatively low, the general presumption is that secondary education focused on an academic curriculum and preparation for higher education, is likely to be the socially preferred form of schooling. Labour market-demanded skills, particularly for blue-collar jobs, are more effectively and cheaply provided by training institutions with typically closer linkages to the world of work than are those usually forged by vocational schools.

Given the enrolment level, appropriate steps should be taken to achieve an equitable distribution of available places, based on past academic achievement and potential. However, as access increases and the enrolment ratio rises, the question of the relevance of traditional academic curricula comes to the fore. This may not be well matched to the needs of less academically talented youngsters or those from lower socio-economic backgrounds; new educational forms, more closely related to the abilities, aspirations and backgrounds of this new tier of students, may need to be developed, as enrolment ratios rise sharply and the majority of youngsters of upper-secondary school age are brought into the system.

The experience of Israel, with over half of secondary school enrolments in vocational tracks, is instructive here.[25] In the few years following statehood in 1948, the more than doubling of its population with the massive immigration from Arab and European countries posed the problem of how to accommodate increased enrolments within a secondary schooling system that was predominantly based on the traditional European academic curriculum. The rapid growth of vocational schooling, into which new immigrant youngsters were predominantly absorbed, has been explained in terms of the perceived need to provide industrial skills for the expanding economy (in the absence of a well-developed apprenticeship system); more relevant was the need to provide alternative forms of secondary education more in keeping with the needs of new immigrant students.

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[25] For the Israeli experience and elsewhere, the interested reader may consult: Ziderman, A. 1969. "Costs and benefits of adult retraining in the UK". Economica, 36, No. 144: 363-76; 1975. "Cost and benefits of manpower training programmes in Britain". *British Journal of Industrial Relations,* 13: 223-44 ; 1977. "The regional location of training centres in Britain: a cost-benefit approach", *International Journal of Social Economics,* 4, No. 2: 32-49; 1978. *Manpower training: theory and policy.* London: Macmillan. 1989. "Training alternatives for youth: results for longitudinal data". *Comparative Education Review,* 33, No. 2: 243-55; 1990. " Financing skills for development: an evolving role for the public sector". *Technical and vocational education and training: proceedings of the regional seminars on technical and vocational education and training*. Manila, Philippines: Asian Development Bank.

As lower-secondary education (LSE) comes to resemble primary education more closely over time: 'high enrolment ratios, standard curricular, etc.', it would also be expected to display a smaller proportion of students enrolled in private schools than for USE. Indeed, the expansion of publicly provided LSE may, initially, lead to a switch from private to public schooling, as previously fee-paying students enrol in the subsidized public sector.

With LSE increasingly becoming part of 'basic education' – largely standardized, universal and with specific educational objectives – then the scope for policies to encourage diversity and differentiated parental choice is weakened. As LSE becomes compulsory in some countries – a badge of citizenship – the case for fee charging is less strong. There is scattered evidence that, as with primary education, externalities are more sizeable for LSE than for USE; if a more consistent marshalling of the evidence confirmed this, then the arguments for reduced subsidization of secondary education become less pressing at the LSE level. In sum, as LSE becomes more to resemble primary education in many countries, so do policies pertaining to the primary level become increasingly relevant to LSE. The policy divide between LSE and USE then becomes increasingly more sharp.

Chapter VI

Changing content of secondary systems

We have argued that curricular diversification is a good policy option used in connection with expanding secondary coverage. But is it seen only as a policy option or, historically speaking, have education systems been forced to diversify their secondary curricula when gross enrolment ratios in secondary education have increased? Put another way, how have enrolments in specific curricular subjects or in tracks changed in response to growing overall enrolments at the secondary level?

In 1993, the World Bank was interested in the answer to this question as part of its secondary education policy research programme. The Bank commissioned a study of the question from three prominent researchers, D. Kamens, J. Meyer, and A. Benavot.[26] Data limitations seriously constrained their ability to answer this question directly. They found no source of information reporting how many students were enrolled in different kinds of curricular programmes in the world's secondary education systems. Instead they were forced to rely on an inferior data source, curricular timetables. From 507 such timetables running back to 1920, the authors were able to determine how many 'school periods' per week were devoted to various school subjects. They coded data from programmes that were not designed to be terminal. Again, the principal limitation of the approach is that the researchers did not know how many students were enrolled in a particular subject or curricular programme at a given time.

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[26] Kamens, D.H.; Meyer, J.W.; Benavot, A. 1993. *The changing content of world secondary education systems, 1920-1990*. Report to the World Bank, March. Washington, D.C. : World Bank.

Relevant to the question posed above, it is of considerable interest to ask how different curricular programmes have fared over time. The authors reasoned that since they knew that programme distinctions reflected substantial differences in intended content, changes in overall programme mix undoubtedly reflected the main changes in the content of secondary education. The following table (*Table 1*), from the authors' paper, reports the proportions of curricula, in each of three time periods, that fall in one or another of the major curricular categories.

Table 1. The distribution of curricular programmes by time periods (Units of analysis are timetables)

	Historical period		
	1930s	1960s	1980s
Curricular programme types	%	%	%
Classical	37	16	9
Mathematics and science	21	28	31
Humanities	19	24	23
Comprehensive	23	32	37
Number of timetables	**116**	**205**	**163**

These data tell a great deal about what has gone on in secondary education over the bulk of this century. The old elite systems of secondary education declined dramatically and were replaced by mass and/or modernized secondary education, as found in the other three programme patterns. Comprehensive or diversified programmes have become the dominant type. The authors conclude as follows:

> ... much programmatic change in secondary education can be summarized in terms of the rise and fall of curricular types: the old European classical programme declines steadily in our century, especially in the former colonial world; it is replaced in many places by some combinations of sciences and arts curricular specializations, and in many others by the sort of umbrella comprehensive secondary education emphasized in the USA (and the Americas generally).

Finally, and keeping in mind the question posed earlier about the historical relationship between growth in secondary enrolment ratios and curricular diversification, we believe that Kamens, Meyer and Benavot have provided plausible evidence of that connection. Namely, as enrolments in secondary schools around the world have risen in this century in response to pressure for a socially more inclusive student body, the comprehensive model has risen in popularity, replacing the classical model of elite European systems commonplace in the period prior to the Second World War.

Chapter VII

Key ideas and important trade-offs in the secondary curriculum[27]

We have now discussed at length both the size and content dimensions of the positioning question. In Chapter V we introduced evidence suggesting that curricular decisions have responded to pressures for expansion in size of the sub-sector. Many of the ideas covered to this point can be boiled down to a few key trade-offs. All choices preclude other choices to a degree, if not completely. Still, compromise is possible and discussion of these matters among educators, politicians, university-based scholars and academics, and business and community leaders will produce decisions that are generally better for good positioning than those made by any single individual or interest group. Our experience suggests that most of the following trade-offs are decided in a manner that is consistent with national tradition, interest group pressure or political expediency and not on an informed, dispassionate or efficiency-maximizing basis. Modern democracies require broad participation in such important decisions as these. We avoid attempting to give a correct answer to the trade-offs. As argued above, we believe that the pressures for curricular diversification will eventually predispose the outcome of these debates in a direction consistent with the demands of democratic pluralism.

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[27] This section is based on Cowell, R.N. 1993b. "Key ideas and important trade-offs in secondary curriculum". Paper delivered at the CIES annual conference, Kingston, Jamaica.

1. Trade-offs dealing with organization

A relatively inflexible common core versus student or parental choice regarding course selection

When the school system sets a required curriculum, uniformity of learning can be better assured and in a tight, predictable and linear sequence. There are economies of scale at work in this established approach, including less need for costly individualized advice. Specific learning objectives are more easily targeted, with fewer misplaced steps along the way owing to confusion about the path to be followed. The resource requirements, physical and human, to deliver the programme can be simply calculated, planned for and delivered. As mentioned earlier, this type of curriculum is preferred in two circumstances. One, where a relatively small share of eligible children enter and complete secondary education, thus assuring a high level of internal homogeneity, and two, where all students entering secondary school have a common post-secondary aspiration, e.g. tertiary entrance examination. A representative cross-section of students, however, will display considerable variation in interests, abilities, and needs. They learn at different rates and in different ways. Their aspirations for work and life are not the same. A set curriculum forces students to submit to a degree of homogeneity inconsistent with the diversity within a student body. How cost-conscious planners can deal with this diversity while at the same time aiming for specific social and economic needs is the driving question. As secondary education comes to occupy a common social experience for the majority of young citizens, this question should be the object of open public debate. Even as curricular choice is broadened, that debate must still include notions of how much choice to include and at what level.

The study of a few courses in depth versus the study of many more courses superficially

The role of secondary education in society is not the same worldwide. Huge differences may exist between rich nations, for whom secondary schooling is mass preparatory education leading to a third level, and poor nations, in which a small proportion of age-eligible children succeed in entering. The possibility, or perhaps the probability, of further education and training beyond the secondary level is crucial to our thinking about this matter. How much general education is required in order to be fit for a lifetime of work under rapidly changing conditions, including many different employers and even employment sectors? Should all students have the same amount of general secondary education? At what age or stage of life should specialized education begin and how specialized need 'general education' become? This question should again be raised and the opinion of those with foresight requested.

One curricular content for all students in the system versus a multiplicity of specialized tracks or streams catering to a wide range of interests and presumed vocational requirements

In most countries, the primary or 'basic' school curriculum is taught by generalists whose training is heavily biased in favour of general pedagogy and against subject specialization. This is possible because the curriculum is standardized. In many countries, particularly those where secondary education is seen narrowly in terms of pre-university preparation, the secondary curriculum is also common for all schools and students. OECD countries have frequently, however, debated the value of a common curriculum for all and created in its place specialized tracks or streams. The key questions here are: at what stage, if any, should students be placed in a situation of curricular choice? Should streaming occur along lines drawn by measured scholastic aptitude? How easy or difficult should it be to cross from one stream to another? Who should decide what stream a student should enter and what criteria should they employ?

Should nations have secondary schools that serve many purposes or separate secondary schools for each purpose?

This question has been debated for most of this century and each country will use variations on the above wording (in the USA, for example, the debate focuses on the 'comprehensive' high school, whereas in other countries 'diversified secondary education' might be spoken of, and there are still others). Regardless of semantic differences and some small substantive ones, the key question boils down to whether or not a population of students with internal variation in perceived needs, abilities and interests, and who are offered a range of courses and curricula in order to meet these needs, be placed together in a single all-purpose secondary school? Are there economies to be realized by this comprehensive school concept and do these compensate for the administrative challenges posed by attempting to place curricular diversity in a single physical space? Do students benefit or lose from studying one set of subjects in the company of fellow students who study a separate set of subjects or similar subjects at a different level?

Learning from formal instructional materials versus learning from the environment and from experience

For most of this century, the presumption has been that learning occurs from textbooks, lecture notes, and from copying material presented on blackboards or the like. Increasingly, however, curriculum developers and system administrators question where the locus of knowledge is and whether the school should have a more prominent role in leading students to find knowledge in and from the community that surrounds them. 'Community' must, of course, now include a global knowledge network. Where then are the walls of the school? Should the school use the social and physical environment that surrounds the school as an arena or laboratory for learning?

If so, how can a curriculum be constructed that does this efficiently? Has any secondary curriculum yet been devised that draws explicitly and formally on Internet providers?

Formal versus non-formal education

Non-formal education (structured learning situations outside schools) grew rapidly in the seventies and eighties in recognition of the impossibility that all children would have access to formal schooling. Although significant advances have been made worldwide to provide universal coverage at the primary level, the secondary level is still available to small minorities in most poor countries. Accordingly, non-formal methods such as through television and radio, community and religious schools, correspondence schools, and night schools all show promise of delivering secondary education to underserved populations at reduced costs. The regular school curriculum cannot be used in most of these alternative delivery systems without modifications that carry their own costs. Moreover, without the face-to-face contact with teachers, quick feedback on learning progress, and student interaction, the non-formal curriculum often produces less than satisfactory results. How should these results be weighed against lower delivery costs and to populations not reachable by traditional means? How many non-formal options should there be and how can governments stimulate their proliferation? Should rural and remote student populations be the only beneficiaries of non-formal education?

Integrated courses versus separate courses

Over time both knowledge and the structure of knowledge change and expand. Changes within the currently dominant disciplinary structure of knowledge are routine and accommodated at some expense through the issuance of new additions to texts and curricular updates. Expansion of knowledge is more problematic, creating packaging problems for already overcrowded content. Moreover, some expansion invariably presents problems of fit, especially in fields that span several disciplines. One method already familiar to curriculum developers in wealthy nations is that of integrating previously isolated subjects into one new, more general, subject. This kind of integration, while reducing an overcrowded curriculum, may upset traditionally-minded scholars who believe that time-tested courses and traditional academic disciplines, each with its own unique way of discovering, presenting and validating knowledge, are violated for reasons of expediency. For example, when parts of biology, psychology, sociology, health and hygiene are combined into a single 'Life Sciences' or 'Family Living' course, adherents to the separate disciplines may find the fusion objectionable on scholarly grounds. How then should advances in knowledge be reflected in the secondary curriculum? What kind of balance should be achieved between cutting-edge research and newly uncovered information and the storehouse of knowledge accumulated by previous generations? What criteria should be employed to make inclusion and exclusion decisions for curriculum content?

Infusion of new information into old subjects versus establishing new subjects

When important new topics or areas of study emerge (e.g. AIDS, urban mass migration) or when old areas acquire new importance to current affairs (e.g. ecology and the environment, ethnic conflict) these areas can either be established as separate subjects in the curriculum or they can be infused into the already-existing subjects. Establishing separate subjects is complicated by the fact that the curriculum is already crowded and by constraints from available hours in an instructional timetable and days in an academic calendar. Adding something entirely new such as environmental studies usually means reduction or elimination of other subjects. There are strong vested interests in the teaching faculty and administration that may create opposition to a plan for eliminating subjects or reducing their salience in the curriculum. If a decision is taken to mix new information into an existing subject orientation, the new material may be lost, ignored, diluted or distorted. New ideas, theories, discoveries, national boundaries and even new nations are inevitable. How, where and with what emphasis should that which is new be inserted into the curriculum?

2. Trade-offs dealing with content

Universal education versus high-quality education

From the author's international experience he has learned that many countries (for example from the former Soviet Union and in Asia) have based their secondary education systems on the needs of their elite as opposed to the needs of their masses. Prior to the era of international achievement testing, nations would frequently assert the quality of their education based on the performance of a tiny fraction of carefully tutored students in an academic Olympiad. Today, most countries understand the need to educate as many of their citizens as possible. They also want that education to be of highest possible quality. Of course, not every student has the ability or motivation to benefit from a single variety of academically oriented education.

Academic education versus vocational education

Can public education ever be justified if it has no job relevance at all? Academic education through schooling, even its purest form, is thought to make those who receive it more worthwhile citizens and more productive workers. Even if they are being prepared for the next level of schooling, at some point their education will end and they will enter the world of work. What is the distinction between academic and vocational education? Is all education 'vocational' in some sense? If so, is explicitly vocational education a superior or an inferior form? If it is superior in some sense, at what stage in a student's education should explicitly vocational content be introduced? Few developing countries will have the luxury of making the training of philosophers or purely abstract thinkers a principal education goal. How then can both 'job preparation' objectives and 'knowledge acquisition' goals be met? Do all students need the same amounts of each? How easy or difficult should it be to switch between academic and vocational education once a student has started in one of these areas? In addition to 'academic' and 'vocational/ occupational' objectives, many secondary schools also have 'personal enhancement' and 'citizenship/life role' objectives. What is the proper balance among the four types of objectives, who decides this, and how does this proper balance differ from culture to culture and from student to student?

Western versus indigenous models of curriculum

There is a feeling in both developed and developing countries that European (sometimes including North American) models of curriculum design and execution are best. And, until very recently, Western academics worried that some Far-Eastern models might be superior. This insecurity has generally meant that an exploration of indigenous options, either in terms of organization or content, is usually not considered to be worthwhile or productive. This may be true even when the understanding and preservation of indigenous cultural patterns is a curricular goal. The presence in a country of curriculum development experts financed by a particular bilateral or even multilateral aid agency will almost always predispose the curriculum department of an education ministry to a western orientation. The presence of nationals who received advanced education in a European or North American university will also influence substance and organization. The questions flow from these facts. In what ways and to what extent should developing countries emulate the curricula of western countries? Is there a trade-off between adopting the curriculum that is best for a given country in its present stage of development and adopting the curriculum of a supposedly leading or successful foreign country? The political and educational leaders of many developing countries want to aim high and to have a curriculum just like the supposedly best in the world, or perhaps as good or better than a former colonial power. But will what is best in a country unlike their own also be best for them?

National development versus cultural preservation

All countries desire economic and social development, however defined. Such development may be one of the highest national priorities in developing countries. Yet all countries are proud of their own history, culture, traditions and folklore. Understanding and preserving these are usually both a national priority and a curricular goal. Sometimes, however, they are seen as antithetical to development. How should curriculum designers react to this conflict? The problem is exacerbated in countries with many different ethnic groups, each with its own values and heritage.

Traditional curriculum versus new basic curriculum at the lower-secondary level

In Asia, Latin America and, occasionally, in Africa, the lower-secondary level is being attached to the primary level to form a longer period of required 'basic' education. This is often being done without changing the lower-secondary curriculum to fit its new purpose. Is this wise? What should the curriculum for basic education be for students who are already literate and numerate but who may not go on for further schooling after their basic education ends?

Developing the curriculum versus assessing the curriculum

The accurate assessment of how well a curriculum meets its stated and implied objectives, and the revision of the curriculum based on the findings of this assessment, are an integral part of the curriculum development process. However, tests developed at the national level in most countries currently assess only a narrow range of the curriculum content. This narrow range is then emphasized by the teachers (and often by textbook writers) to the exclusion of other, perhaps equally important, parts of the curriculum. Test experts are technical specialists and they seldom know much about teachers, students or classrooms. Teachers and testers seldom talk to each other and, when they do, they seldom 'talk the same language'.

3. Trade-offs dealing with control

Political versus educational control of the curriculum

Who should control the structure and content of a curriculum? Politicians? University professors? Teachers? When teachers are in control, the curriculum tends to emphasize flexibility and the possibility of meeting individual needs. The content and its sequencing tends to reflect the realities of classrooms and the true possibilities for learning. To be successful, teacher control of the curriculum implies highly trained teachers, a condition usually difficult to meet in developing countries. When university professors are in control, the latest knowledge may be included in the curriculum, but curricula tend to be very academic, abstract, and overloaded with content, which is too difficult for students at the grade level where it is placed. When politicians are in control, often the needs of nationalism, social and economic development, and the political status quo may be served, but curriculum decisions do not tend to be based on educational experience, learning theory, adolescent psychology, or other factors relevant to successful learning.

Free education versus cost recovery for educational services

In countries with small upper and middle classes, which includes most developing countries, the costs of secondary schooling, even if modest, can be so high that most families have great difficulty in committing scarce resources to sending some or all of their children to this level of education. An attractive curriculum, which is seen as relevant and worthwhile to both parents and students, can be a powerful motivation to convince families to invest the necessary funds in secondary education. Costs to the government for secondary education are generally much higher than are the costs of primary education, due to the need for at least minimal laboratories, libraries, supplementary materials and equipment, simple sports facilities, etc., at the secondary level. It is often both politically and financially difficult to recover even part of these costs from poor parents. Parent-supported self-help schools have worked to resolve this problem in some areas.

Government education versus private education

The issue of public as opposed to private (including religious) schooling is not basically a curriculum issue. However, one of the reasons that parents may choose private education is their perception of higher quality and more relevant curricula in private schools. They may also choose such schools because the language of instruction is perceived as more desirable in terms of leading students into prestigious occupations and other attractive life options. The language of instruction influences the 'delivered' curriculum. The 'received' curriculum, that is, what the students actually learn, is slowed down when they are learning in a second language. Language policy is, of course, often a political issue.

These trade-offs point clearly to policy options, options that are particularly important to developing countries.

Chapter VIII
Summary and priority issues

When educational policies are debated in an attempt to position secondary education more effectively, we would assume that the contemplated changes will yield additional economic or social benefits. When government constrains the expansion of enrolment in an effort to maintain school quality, for instance, it does so in the expectation of higher economic returns. But what empirical evidence actually exists to substantiate claims that modifying positioning delivers its intended benefits? Overall, the size of the sub-sector, specifically its expansion, would stem from a clearer understanding of the positions (or 'positionings') that would maximize its intended benefits.[28]

Does secondary education boost economic growth? This fundamental question underlies policy debates about the optimal size and function of the sub-sector. Occupational or economic benefits accruing to individual students are beyond the scope of this work, but in fact are clear and less controversial. Secondary schooling, it is generally agreed, will help determine which individual youths experience greater success in the labour market or gain greater access to the university. Two additional findings associated with individual returns to secondary schooling should be highlighted. First, the rates of return among youth that finish secondary school remain over 8 per cent in most industrialized and middle-income countries. In developing countries whose secondary education systems are highly selective, in which the supply of graduates remains scarce, rates of return can be upward of 20 per cent. But wage benefits from secondary education have been falling; they are already the

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28 Baker, D. and Holsinger, D. 1996. "Human capital formation and school expansion in Asia: does a unique regional model exist?" *International Journal of Comparative Sociology,* XXXVII, No. 1-2: 159-173.

lowest in industrialized countries. In the USA, for example, the private rate of return among high-school graduates has declined by 40 per cent during the past two decades.[29] Male high-school graduates in the USA currently earn 25 per cent less than did their fathers 15 years ago (in constant dollars). Although less dramatic, individual returns from secondary school are falling in many developing countries as labour scarcities ease and wage-sector demand levels off. During the past 15 years, for example, private returns have fallen from 11 per cent to 7 per cent in Pakistan; from 18 per cent to 12 per cent in Venezuela; and from 18 per cent to 13 per cent in Taiwan.[30]

A related issue is whether the growth of secondary education reduces income inequality. This topic has received considerable attention from researchers. Current evidence suggests that during early periods of secondary expansion, incremental enrolment gains have no effect on, or even worsen, the distribution of cash income among individuals. But during later periods, as the sub-sector broadens access and as the supply of literacy and other skills is distributed among more youth, income inequality begins to diminish. This latter effect is confounded with the diversity of wage jobs and capital investment across different economic sectors.[31] The extensive study of income returns among graduates in Kenya and Tanzania helps disentangle the independent influence of labour-force composition and school attainment on income equity. When variation in wage and job structures was held constant, secondary graduates with higher achievement levels did earn more. The distribution of income in both countries was determined jointly by the structure of jobs, wages, and secondary-school performance.[32]

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[29] Psacharopoulos, G. 1985. "Returns to education: a further international update", *Journal of Human Resources*, 20: 583-604; Psacharopoulos, G. 1989. "Time trends of the returns to education: cross-national evidence", *Economics of Education Review*, 8: 225-231.

[30] Murnane, R. 1991. "Why do today's high school education males earn less than their fathers did?" Draft paper presented at Harvard University (MA), September.

[31] Mincer, J. 1970. "The distribution of labor incomes: a survey with special reference to the human capital approach", *Journal of Economic Literature*, 8: 1-26; Chenery, H. and Syrquin, M. 1975. Patterns of development 1950-1970. New York: Oxford University Press; Ram, R. 1989."Can educational expansion reduce income inequality in less developed countries?" *Economics of Education Review*, 8: 185-195.

These empirical findings summarize how secondary education contributes to the mobility and relative income of individuals. But how do the size of the sub-sector and its rate of expansion influence national productivity and growth? To address this issue, researchers have estimated the economic effects of secondary education by studying longitudinal variation both across nations and within particular countries. Using the former strategy, a recent World Bank study found that secondary enrolments in developing countries have been positively related to GDP levels during the past three decades, with the important exception of South Asian nations, in which an excess supply of graduates may diminish the marginal effects realized from additional enrolments. A similar study found that economic effects from secondary schooling are attributable more to male, rather than to female, enrolments.[33] This finding may be due to the fact that female enrolments sometimes rise faster than labour demand, especially when customs or formal discrimination limit the educational access of young women.[34] Focusing on variation among sub-Saharan African countries, another study found a reciprocal effect between school enrolment and GNP per capita, revealing that declines in family income help explain the static or declining enrolments now observed in several countries. Cross-national models have been constructed for larger samples of developing and industrialized countries. Secondary enrolments continue to show positive economic effects, but only during periods of global economic growth. During economic slowdowns, secondary education enrolments are not significantly related to GDP levels.[35]

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[32] Knight, J. and Sabot, R. 1990. *Education, productivity, and inequality*. New York: Oxford University Press.

[33] Lau, L.J.; Jamison, D.T. and Louat, F.F. 1991. *Education and productivity in developing countries: an aggregate production function approach*. WDR Working Paper 612. Washington, D.C.: World Bank.

[34] Benavot, A. 1989. "Education, gender, and economic development: a cross-national study", *Sociology of Education*, 62: 14-32.

Two institutional forces condition the potential link between secondary education and economic growth. First, the quality of schooling must be sufficient before economic effects are observable. This finding comes from historical studies of economic growth in both Europe and Latin America.[36] Second, government economic policies may condition the economic sectors in which secondary education helps push productivity growth. For example, a recent study found that secondary schooling has contributed to South Korea's economic growth since 1955, but primarily in the agricultural sector, not in manufacturing. This trend appears to be due to the Korean Government's investment in technological improvements in the farm sector; manufactured exports, such as textiles, shoes, and plywood, have not required skill improvements.[37]

Evidence is scarce on the social effects of secondary education. We do know that under some country conditions, secondary schooling (a) increases the labour-force participation of young women, which probably supports positive maternal practices, including a reduction of birth rates[38] and (b) lowers fertility rates by increasing girls' time in school, and, in turn, by raising literacy rates and postponing the age at marriage. More literate mothers (but not necessarily fathers) display positive maternal health practices and, over time,

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35 A reciprocal model, examining the interaction between literacy and GNP per capita gains, is described in Wheeler, D. 1980. *Human resource development and economic growth in developing countries: a simultaneous model*. Staff Working Paper 407. Washington, D.C.: World Bank. Also see McMahon, W. W. 1992. "The economics of school expansion and decline", *The political construction of education*: 117-134. Fuller, B. and Rubinson, R. (eds.). New York: Praeger Publishers.

36 For France, see Hage, J. 1988. "The active state, investment in human capital, and economic growth: France 1825-1975", *American Sociological Review*, 53: 824-837. For Mexico, see Fuller, B.; Heyneman, S. 1989. *Third World school quality: current collapse, future potential. Educational Researcher,* 18(2): 12-19.

37 For a review of this empirical work, see Rubinson, R. 1992. "Specifying the effects of education on national economic growth". In: *The political construction of education*, Fuller, B. and Rubinson, R. (Eds.).

38 Schultz, T.P. 1989. *Returns to women's education*, WDR Working Paper 1. Washington, D.C.: World Bank.

invest more heavily in the education of their own children.[39] Note that the quality of secondary schooling plays a critical role in each of the two processes. Increasing the time that girls and boys spend in school is effective only when instruction significantly affects the forms of achievement, beliefs, and skills that are related to these social outcomes.[40]

The most recent world fertility survey focused in part on the fertility effects of different levels of schooling. Primary schooling, even just three years of attendance, has some effect on reducing fertility (except in parts of Africa). Completing primary school and entering secondary school has stronger effects on actual birth rates and desired family size in all regions. These effects are particularly strong when family planning services are widely available.[41]

From the discussion above, diversifying secondary education curricula remains a tempting reform. It signals to working class and rural parents that the secondary school is not exclusively to place privileged youth in urban, white-collar jobs. Moreover, the practical reality of expanding access beyond the traditional elite logically requires the notion of a corresponding curricular diversification. Yet serious vocationalization of the curriculum is very expensive. Almost without exception, general secondary curricula are the least expensive and the most preferred. Years of extensive research have demonstrated that curricular programmes that contain industrial or agricultural courses can be 50 per cent more expensive per pupil, and the labour-market performance of their graduates is indistinguishable from the performance of graduates from general secondary education.[42]

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[39] See papers contained in King, E. and Hill, M.A. 1991. *Women's education in developing countries: barriers, benefits, and policy*. PHREE Paper Series 91/40. Washington, D.C.: World Bank. Also see Birdsall, N. 1985. "Measuring time use and nonmarket exchange". In : *Third World poverty: new strategies for measuring development progress*. McGreeve, W. (Ed.). Lexington (MA): Lexington Books; and Wolfe, B. and Behrman, J. 1987. "Women's schooling and children's health", *Journal of Health Economics*, 6: 239-254.

[40] For a review of research on the social benefits of primary and secondary schooling, see Floro, M. and Wolf, J. 1990. *The economic and social impacts of girls' education in developing countries*. Washington, D.C.: USAID and Creative Associates, Inc.

[41] For a summary of recent world fertility surveys, see Bledstein, B. 1976. "Women's education from demographic and health surveys". Paper presented in Bangkok, March (unpublished manuscript). In: Demographic and Health Surveys, 1989. *The culture of professionalism*. New York: W.W. Norton. For a review of fertility effects from varying levels of education, see Herz, B. 1991. *Letting girls learn: promising approaches in primary and secondary education*. Discussion paper 133. Washington, D.C.: World Bank.

The World Bank's recent review of vocational training provides further evidence of the high cost of diversified secondary and separate vocational schools. Although, as discussed above, Bank staff have relied too heavily on an often mistaken reading of the Psacharopoulos and Loxley work on diversified curricula, empirical evidence on the matter of the relatively high unit cost of vocational curricula must not be ignored. Sound policy advice has, at times, fallen victim to the political needs of national leaders hard pressed by youth unemployment. Rarely have these programmes been cost-effective, but only when the cost of instruction is kept comparable to academic instruction, when the content of programmes responds flexibly to shifts in labour demand, and when growth in labour demand is sustained over long periods of time. Of course, meeting these conditions is difficult given the institutional rigidities of most vocational programmes at the secondary level.[43]

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[42] By far the most cogent and complete review of Vocational and Technical Education is found in the recent work of two IIEP scholars. Their work, while sympathetic to VET is balanced and comprehensive. See Atchoarena, D. and Caillods, F. 1999. "Technical education: a dead end or adapting to change?" *Prospects* XXIX, No. 1: 67-87.

[43] Middleton, J.; Ziderman, A. and Van Adams, A. 1993. *Skills for productivity: vocational education and training in developing countries.* New York: Oxford University Press.

The matter of vocational education and training will likely remain controversial for some time to come. The author's policy advice, based on evidence and personal experience, is as follows: (a) that investment in flexible and broad education and skilled workers is important for industrial wage jobs, agriculture, and small-scale enterprises; (b) that both private employers and the public sector should play a role in raising the quality of the workforce; (c) that, in many cases, training within specific enterprises, financed by private resources, is the most efficient form of human capital investment; (d) that curricular diversification, broadly defined, is an inevitable consequence of substantial increases in coverage; and (e) that focusing public investment on improving the quality of primary and general secondary education is frequently a more cost-effective strategy than creating separate vocational tracks.

Given the high initial cost of diversifying the secondary curriculum, governments are searching for ways to make the content of secondary schooling more 'practical'. Attempting to do so is difficult: governments must often change the visible instructional materials or move to clear academic and vocational streams. These demands are particularly acute in the presence of high underemployment among graduates. Donors, in particular the World Bank, have not been well-equipped to advise governments on how curricula can be linked to practical concerns, while the costs associated with diversification are minimized. Surely this is a major area of concern and worthy of future analysis and policy dialogue.

Conclusions

This paper has attempted to: (a) capture and describe the major issues facing secondary education, with the exception of finance; (b) introduce the concept of 'positioning' of the sub-sector as a means of illustrating the balance between size and content and the impact of decision concerning size on the curriculum; (c) revisit a portion of the debate regarding the role of pre-vocational job training as part of the secondary curriculum and to re-examine one influential set of evidence concerning the efficacy of national attempts to diversify the secondary curricula; and (d) describe in detail the key questions facing curriculum developers at the secondary level.

Strong efforts to conserve resources within the secondary education sub-sector are required if systems are to improve in quality and expand coverage. Several avenues are available for containing costs while achieving incremental growth with quality. Debate continues about the wisdom and efficiency of diversified curricula. Donors can and must do more to encourage curricular models that emphasize locally relevant materials, while avoiding unjustifiably high instructional costs.

No magic recipes exist for positioning secondary education more effectively. The discussion points described above and the policy alternatives for curriculum developers represent a preliminary set of issues, the informed discussion of which might enrich the dialogue surrounding the proper positioning for a particular country. It is suggested that much must still be learned about how secondary schooling fits into a country context, not only how policy-makers claim it fits, but also what effects actually and observably stem from investments in secondary education.

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POSITIONING SECONDARY-SCHOOL EDUCATION IN DEVELOPING COUNTRIES

Expansion and curriculum

The book

The policy-maker is often confronted with a number of difficult decisions when setting out to expand and define the curricular orientation of the secondary-education system. This is the situation in many developing countries, which are currently in the throes of reform and moving away from the elitist system that often predominated in the past. Amongst the problems that they face are considerations such as how to increase access to secondary whilst preserving quality, and to what extent vocational skills should be included in the curriculum.

This book methodically examines the choices available to the planner and the factors to be taken into account. It pays particular attention to the possibility of 'diversified' education, i.e. education that provides a balance between 'academic' and 'vocational' subjects, and questions the traditional cleft between the two, as today's society requires, more than ever, the flexibility to learn and the capacity to carry out varied tasks. It also looks at the cost-effectiveness of the different curricular alternatives.

The aim of the study is not to give all the answers, but to equip planners to be able to ask the right questions. They should come away from this book with a better idea of how to define their field of action.

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